

**IN THE CLAIMS:**

A marked up version of the claims showing the amendments is attached hereto as Exhibit A.

Please cancel claims 1-8. Please add new claim 9-19 as follows:

9. (New) A method for predicting the likelihood of response to medication of a patient with a behaviorally-diagnosed psychiatric condition comprising:

identifying patterns in a database of quantitative electroencephalographic (QEEG) features derived from a population of patients whose medication outcomes and treatments are known, wherein the patterns are associated with likelihoods of response to a medication, or to a class of medications, or to a combination of medications or classes of medications and are represented by variables comprising multivariables that are combinations of and depend on two more QEEG features, and

comparing patterns of QEEG features of the patient with the identified patterns in the database in order to predict likelihoods of response of the patient to a medication, or to a class of medications, or to a combination of medications or classes of medications associated with the patterns.

10. (New) The method of claim 9 wherein the database is updated with the QEEG features and the response of the patient to medication.

11. (New) The method of claim 9 wherein the QEEG features include measures of absolute power, or measures of relative power, or measures of coherence, or measures of symmetry, or measures of the mean frequency in the delta, theta, alpha, and beta bands, wherein each measure is from each of a plurality of EEG electrodes.

12. (New) The method of claim 9 wherein the multivariables include one of more of the following:

(i) variable representing interhemispheric coherence, monopolar frequency, or monopolar relative power measured at a plurality of locations and frequency bands, including

anterior delta, posterior data, anterior theta, posterior theta, anterior alpha, posterior alpha, anterior beta, or posterior beta,

(ii) variable representing bipolar interhemispheric asymmetry, monopolar interhemispheric asymmetry, or interhemispheric bipolar coherence measured at a plurality of frequency bands, including delta, theta, alpha, beta, and

(iii) variable representing intrahemispheric asymmetry, bipolar relative power, or intrahemispheric coherence measured at a plurality of combinations of frequency bands and locations, including delta-left, delta-right, theta-left, theta-right, alpha-left, alpha-right, beta-left, beta-right.

13. (New) The method of claim 9 wherein the classes of medications include psychostimulant medications, or antidepressant medications, or anticonvulsant medications, and wherein the combinations of classes includes combinations of psychostimulant and antidepressant medications, or combinations of anticonvulsant and antidepressant medications, or combinations of psychostimulant, antidepressant, and anticonvulsant medications.

14. (New) A method for predicting the likelihood of response to medication of a patient with a behaviorally-diagnosed psychiatric condition comprising:

classifying by rule-based methods patterns of quantitative electroencephalographic (QEEG) features of the patient in order to predict likelihoods of response to a medication, or to a class of medications, or to a combination of medications or classes of medications associated with the patterns,

wherein the step of classifying uses rules representing identified patterns, wherein the patterns are associated with likelihoods of response to a medication, or to a class of medications, or to a combination of medications or classes of medications and are represented by variables comprising multivariables that are combinations of and depend on two more QEEG features.

15. (New) The method of claim 14 wherein the multivariables include one of more of the following:

(i) variable representing interhemispheric coherence, monopolar frequency, or monopolar relative power measured at a plurality of locations and frequency bands, including anterior delta, posterior data, anterior theta, posterior theta, anterior alpha, posterior alpha, anterior beta, or posterior beta,

(ii) variable representing bipolar interhemispheric asymmetry, monopolar interhemispheric asymmetry, or interhemispheric bipolar coherence measured at a plurality of frequency bands, including delta, theta, alpha, beta, and

(iii) variable representing intrahemispheric asymmetry, bipolar relative power, or intrahemispheric coherence measured at a plurality of combinations of frequency bands and locations, including delta-left, delta-right, theta-left, theta-right, alpha-left, alpha-right, beta-left, beta-right.

16. (New) A method for tracking changes produced by the administration of a medication to a patient with a behaviorally-diagnosed psychiatric condition comprising:

obtaining quantitative electroencephalographic (QEEG) data from the patient before administration of the medication,

administration of the medication, and

obtaining QEEG data and a clinical improvement score from the patient after administration of the medication.

17. (New) The method of claim 14 further comprising:

comparison of patterns of QEEG features of the patient before and after administration of the medication with identified patterns in a database of QEEG features derived from a population of patients whose medication outcomes and treatments are known, wherein the identified patterns are associated with likelihoods of response to a medication, or to a class of medications, or to a combination of medications or classes of medications and are represented by variables comprising multivariables that are combinations of and depend on two more QEEG features.

18. (New) A computer system for predicting the response of a patient with a behaviorally-diagnosed psychiatric condition to medication comprising: